ABERDEEN

COMPLETE NETWORK SOLUTIONS

USER'S MANUAL

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INTRODUCTION

Aberdeen LLC, the Custom Server Solution Provider, has provided an excellent selection of quality custom computing solutions to the IT professional for more than a decade. As an innovator of storage solutions Aberdeen has become a one-stop solution source for the IT Professional.

The computer industry is a continuously evolving marketplace. With a clear vision of the future, Aberdeen has become a trend setter via its vast technical experience and industry foresight. Aberdeen is a pioneer in providing customizable rack mounted servers, backup solutions and scalable NAS storage appliances.

Aberdeen Rackmount Storage Server applicable models.

- Aberdeen XDAS – Scalable Direct Attached Storage

As an industry leader, Aberdeen not only reduces cost of ownership by offering the longest warranty in the industry, but also has demonstrated better performance and has proven to provide a better ROI than the competition in head-to-head comparisons

ABERDEEN CONTACT INFORMATION

Aberdeen understands that service does not stop once a product ships. We sincerely hope there will never be a situation in which a problem arises; however, should there be a need for service, Aberdeen will be there to provide the prompt, courteous, and efficient service expected.

Headquarters

Address:	9130 Norwalk Blvd. Santa Fe Springs, California 90670
Telephone:	562-699-6998
Fax:	562-695-5570
Email:	GenSales@aberdeeninc.com
WWW:	www.Aberdeeninc.com

Customer Support

Hours:	Monday - Friday, 8am – 5pm PST
Telephone:	562-699-6998 ext. 152
Email:	CustomerService@aberdeeninc.com

Technical Support / RMA

Hours:	Monday - Friday, 8am – 5pm PST
Telephone:	562-699-6998 ext. 326
Email:	RMATech@aberdeeninc.com

5-YEAR WARRANTY TERMS AND CONDITIONS

Aberdeen provides an industry leading 5-Year Warranty on any of its fully configured rackmount servers. All Aberdeen fully configured rackmount solutions are warranted to be free of defects in materials for a period of five years from date of shipment or the lifetime of the product to be free of workmanship defects. A fully configured rackmount system is defined as a system, which in a single purchase includes the rackmount chassis, motherboard, processor(s) with appropriate cooling equipment, memory and hard disk drive(s) all assembled. This warranty does not cover any abuse, misuse or modification of products. We reserve the right to repair or replace the defective product under warranty as we see appropriate. We do not warrant uninterrupted or error-free operation of a product. We do not warrant that any product that you acquire will meet your individual requirements

"Aberdeen's warranty is 'REAL' and their response is immediate!"
- Customer testimonial; Mr. Tawfik Daoud, Maximus Inc.

MISSION STATEMENT

The Straight Talk People. - The primary business focus for Aberdeen is to be the IT professional's preeminent resource for complete network solutions, while remaining dedicated to building and maintaining excellent service and support relationships with its clientele.

COMPANY BACKGROUND

Founded in 1991, Aberdeen LLC is a leading direct marketer of rackmount servers, storage solutions, computers and computer hardware. Voted among The Direct 100 vendors by PC Computing magazine, Aberdeen designs, manufactures and customizes award-winning Aberdeen brand computer systems, Stirling rackmount servers, AberNAS storage appliances and backup storage servers. Aberdeen LLC provides assistance to its vast customer base in the planning, budgeting and implementation of complete network solutions including High-Performance Computing and NAS/SAN deployment within existing IT environments. For product sales, service or company information, contact Aberdeen at 800-552-6868, by fax at 562-695-5570 or visit www.aberdeeninc.com.

GOALS

To provide rack mounted server, data storage, and network solutions to the business, government, education and telecommunication sectors.

To continually offer a comprehensive selection of cutting-edge computer hardware components and be the single source for the most reliable and the best valued backend server networking solutions in the market.

To exceed its clients' expectations through dedicated one-on-one service, unequalled attention to detail, and custom solutions designed to overcome networking obstacles.

THE ABERDEEN ADVANTAGE

Aberdeen's consummate professional and highly experienced sales, management and technical teams are key elements in its ability to provide the finest complete network solutions and service available in the marketplace.

With unparalleled experience in the industry, Aberdeen has accumulated the expertise to design and custom configure any network ranging from a couple of workstations to a complete SAN/NAS network environment.

Aberdeen's ability to provide the best service and hardware availability is enhanced by its certifications and partnerships with the recognized leaders in the computer industry.

Company Certifications include:
- Microsoft Certified Partner
- Intel Premier Provider

Staff certifications and qualifications:
- Microsoft Certified Professional
- Microsoft Certified Systems Engineer
- Intel Certified Solution Consultant
- Intel Certified Integration Specialist
- Novell Unix and Linux Professionals

ABERDEEN LEADS INDUSTRY WITH 5-YEAR WARRANTY

Aberdeen is pleased to provide an industry leading 5-Year Warranty on any of its fully configured rackmount servers. Whether you select one of the pre-configured Stirling servers or custom design a complete server for yourself, it will be warranted to be free of defects in materials for a period of five years from the date of shipment and for the lifetime of the product to be free of workmanship defects.

CUSTOM SERVER SOLUTIONS PROVIDER

Aberdeen LLC has provided personal and corporate customers quality custom computing solutions for more than a decade. Customizable Stirling rack mounted servers, backup solutions and AberNAS storage appliances not only offer a longer warranty and demonstrate better performance, but have proven to provide a better ROI than the competition in head-to-head comparisons. Aberdeen offers a comprehensive product line for the Gaming Enthusiast to the IT Professional.

- Fully Customizable Rackmounts, Servers, Chassis and Systems
- Full Network Solutions and Rackmount Server Cabinet Models
- NAS/SAN Mass Storage Solutions Units and Appliances
- RAID protected Disaster Recovery and Backup Servers
- Governmental, Educational and Corporate Workstations
- Complete Server Solutions for Microsoft, Unix and Linux platforms
- Industrial PC Components; Data Acquisition, SBCs and Backplanes
- Hand Held & Modular Hard Drive Duplication
- Comprehensive line of PC Hardware

REFERENCES

Over the years Aberdeen LLC has been privileged to work with companies that share similar expectations and professional goals to its own such as unmatched customer service, personal and professional integrity, honest communication and the commitment to forming long-term partnerships.

The innovative Stirling "Backup Monster" storage server impressed Tawfik Daoud, senior system engineer of Maximus Inc. enough to praise Aberdeen in a recent letter. Mr. Daoud mentioned that he chose Aberdeen since the "Backup Monster" costs considerably less than the closest competitor and was "amazed" with the ease of implementation and performance. Mr. Daoud goes on to write in his testimonial.

"The "Backup Monster" is one step ahead in the backup industry and what I like most is that Aberdeen is backing it up."

The Stirling S21 Server appealed to David Featherstone, a network administrator for Timber Products, a company of 1,500 employees, who told PC Magazine how happy he is with the Stirling brand server and that he plans to purchase more in the future.

"Over the years, I've tried everything," Mr. Featherstone says. "I have built my own servers, or bought them from major vendors, but I really like these. The value you get for your money is impressive."

Satisfied clients are the best reference for Aberdeen. Below includes a sample of some of the world-class companies whose rack mounted server expectations have been exceeded by Aberdeen to the point that they have become frequent repeat customers.

Adventists	Intel	Ohio State University	University of Michigan
Boeing	Lockheed	Paramount Pictures	University of Washington
Computer Sciences Corp	Microsoft	Penn State University	US Army
Cornell University	Motorola	Raytheon	US Navy
Central Intelligence Agency	Northrup Grumann	Stanford University	Vanderbilt University
Dow Chemical	Novartis Pharmaceuticals	Timber Products	Verizon
IBM	Oak Ridge National Lab	UC Lawrence Berkeley Lab	Virgin Entertainment

REVIEWS AND AWARDS

Throughout the years Aberdeen LLC has received praise and critical acclaim for custom built servers and desktop systems. Take a look at these recent comments about Aberdeen Stirling Servers from - ***PC Magazine.***

"The Stirling S17 Merits an Honorable Mention" - ***PC Magazine 2003***

"The least expensive Intel-based server in our roundup, the Aberdeen Stirling S17 offers a lot of power and scalability for the money." - ***PC Magazine 2003***

"We were impressed with the Stirling S17's performance; it generally led the pack in test results" - ***PC Magazine 2003***

"Astonishingly Low Price. Inexpensive, Hardworking Server the Aberdeen Stirling S21 is a good choice." - ***PC Magazine 2002***

"With an Unrivaled five-year warranty … (the Stirling S21) offers comparable components and performance (to IBM)." - ***PC Magazine 2002***

PREVIOUS COMMENTS FROM THE EXPERTS

"The Claymore D90G is the fastest PC we've seen so far." - ***Maximum PC 2001***

"There's No Mystery Here- This One's a Beast … Aberdeen's Loch Ness machine is a tower of power." – Loch Ness D80G - ***Maximum PC 2001***

"Aberdeen shows us what a real gaming system should be all about with its latest computer." – Loch Ness D45G - ***PC Gamer Editors' Choice 1999***

APPENDIX - A

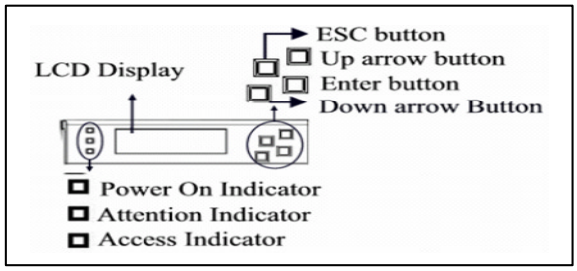
XDAS SCALABLE NAS

INITIAL XDAS ADMINISTRATION

The AberSAN i100/i300 support scalable external storage using the Aberdeen XDAS RAID Subsystem(s). When ordered in conjunction with the Aberdeen AberSAN i100/i300, the XDAS RAID Subsystem is pre-configured according to the customer's preference noted during the order process. Although the XDAS unit is ready to go right out of the box, it may be necessary to modify settings from time to time to accommodate evolving network storage demands. Perform the following steps to quickly configure the XDAS RAID Subsystem according to specific storage requirements.

The most convenient means to access the XDAS RAID Subsystem is via Web browser graphical user interface (WEBGUI). In order to access the XDAS via WEBGUI, an Ethernet connection must be in place between the XDAS Ethernet LAN port and any available LAN switch port. Administration can be performed on the XDAS from any client residing on the same network subnet with a standard web browser. The default IP address is: **192.168.1.1**. It may be necessary to change the IP address to accommodate different network subnets. To easiest way to change the IP address is by using the front panel touch-control keypad located on the front of the XDAS.

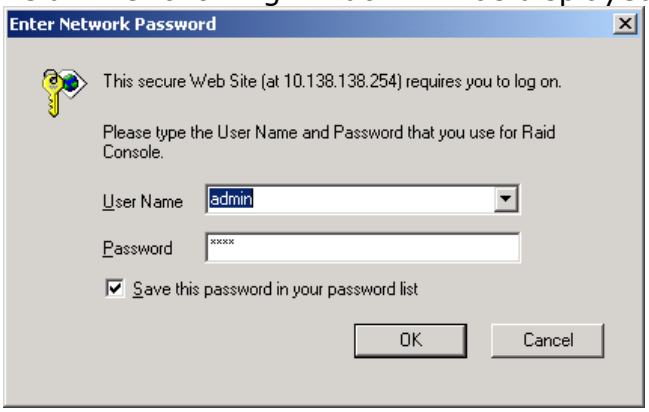
Perform the following steps to assign a new IP address or set the XDAS to use a DHCP server.



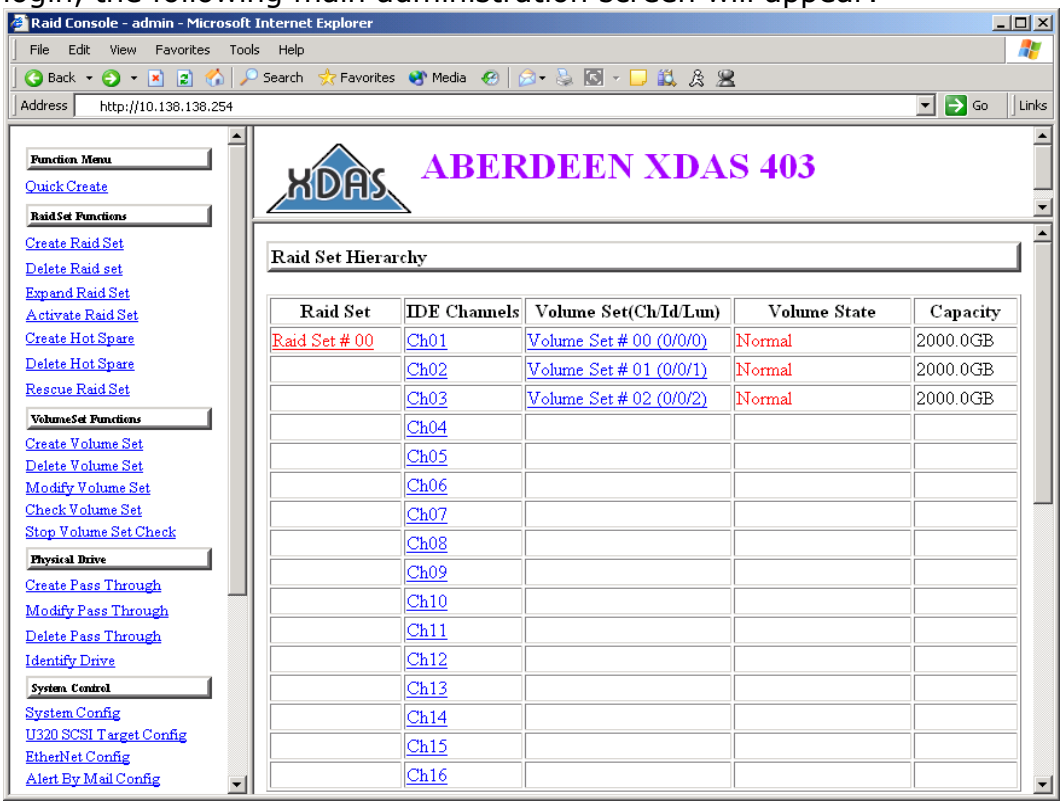
1. Press "ENT" button ("Verify Password" will appear)
2. Enter default password "0000" using the Up/Down/ENT keys (Continue pressing "ENT" until the cursor on the screen disappears to the right)
3. Use down arrow to scroll down until "Ethernet Configuration" appears then press "ENT".
4. "DHCP Function Disabled" will be displayed. Press "ENT" to enable DHCP or scroll down to modify "Local IP Address".
5. When default IP is displayed, "192.168.1.1" press "ENT" to modify. Use Up/Down/ENT keys to input desired IP Address. The new "Local IP Address" just entered will now be displayed. Press "ESC" twice to return to main display. The new IP will be used to access the XDAS via WEBGUI.

Now that the IP has been assigned, the XDAS can be administered via web browser from any network client running Windows or Linux operating systems. The following steps can be performed to quickly setup the XDAS RAID Subsystem to adhere to specific network storage requirements.

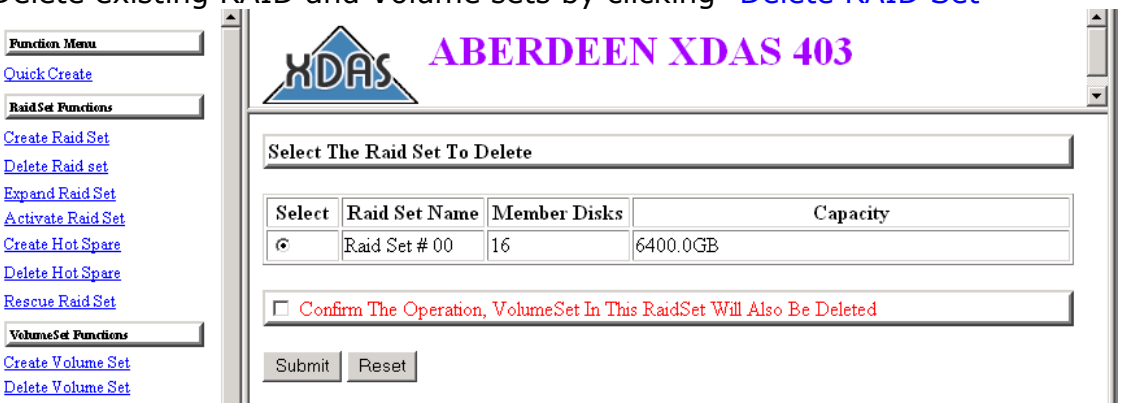
1. Open Web browser and enter the XDAS local IP Address into the address field. The following window will be displayed:


Enter Network Password
This secure Web Site (at 10.138.138.254) requires you to log on.
Please type the User Name and Password that you use for Raid Console.
User Name
admin
Password
****
Save this password in your password list
OK
Cancel

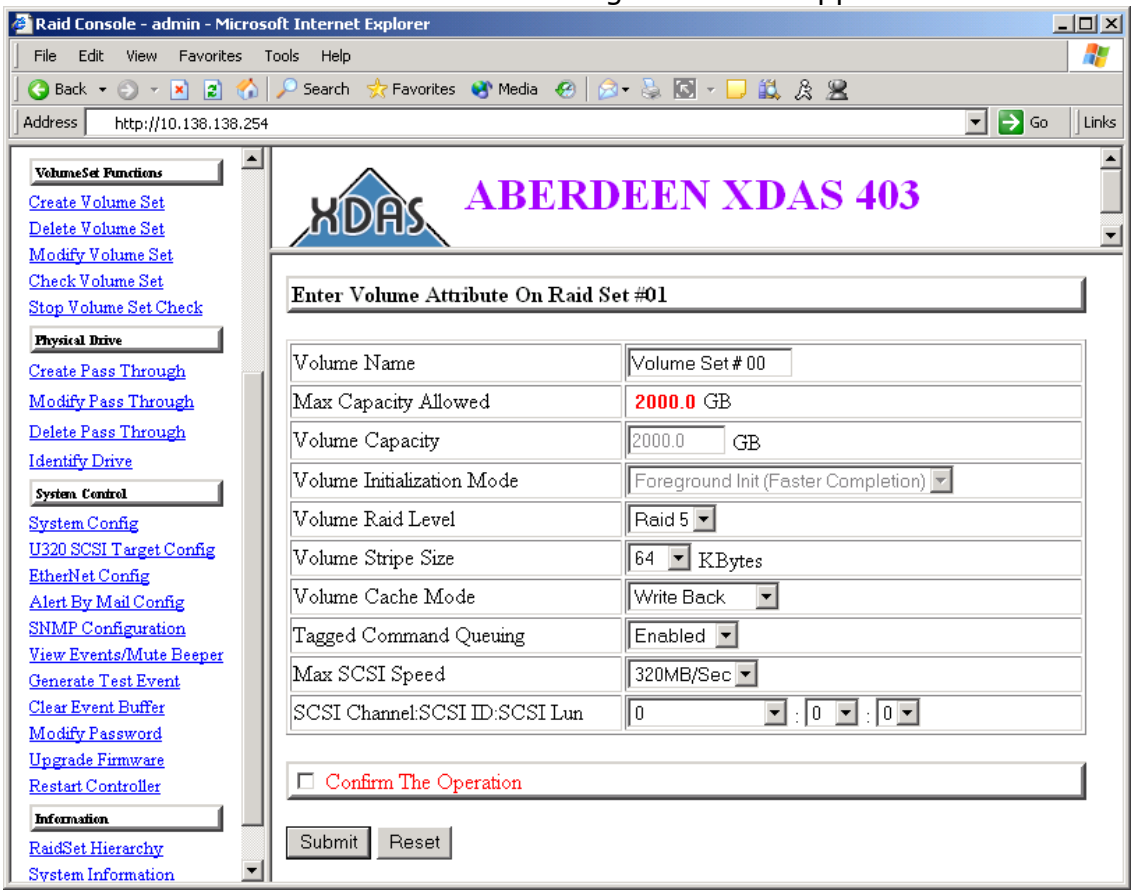
2. Enter the default User Name "Admin" & Password "0000". Upon successful login, the following main administration screen will appear:



3. In order to create a new storage configuration, the existing Aberdeen pre-configured RAID and Volume sets must be deleted and re-created.
4. Delete existing RAID and Volume sets by clicking "Delete RAID Set"



5. Confirm the operation by checking the confirmation box then continue by clicking "Submit".
6. Create new RAID set by clicking "Create Raid Set".
7. Select all available drives by checking each box next to each drive.
8. Select "Create Volume Set". The following screen will appear:



9. Enter desired volume name, volume capacity, and Raid Level. Everything else should remain at default setting. Check "Confirm" to complete the volume set creation. *Note: The XDAS supports volume sizes beyond 2TB for Windows and Linux. When creating volumes larger than 2TB, select the "Greater Two TB Volume Support" drop down list and select "No" for no support beyond 2TB, "64-LBA" for Linux/Unix, or "For Windows" to enable functionality for Windows-based servers. Click "Confirm" to complete volume set creation.*
10. Continue creating additional volumes if necessary by performing the same steps outlined above until available disk space has been exhausted. *Note: Under normal circumstances, it should not be necessary to create more than a single Raid Set. The advantage is that many Raid volumes can be created under a single Raid 5 set which results in sacrificing just a single drive for parity, instead of one drive per volume like many other Raid Subsystems on the market.*

Newly created volume sets will not be available to the attached server until the volumes have completed initialization. Initialization time varies based on the size of the Raid Set, number of volume sets, and of course the size and number of member hard disk drives.

For complete XDAS Raid Subsystem setup options and parameters, please refer to the XDAS manual located on the enclosed AberSAN i100/i300 CD

ABERDEEN XDAS SERIES
RAID SUBSYSTEM
HARDWARE INSTALLATION GUIDE

Ver. 1.0

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XDAS Series RAID Subsystem Hardware Installation Guide

Ver. 1.1

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Regulatory information

For Europe

This drive is in conformity with the EMC directive.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

Those limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antennas.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circlet different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Warning:

A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.

Use only shielded cables to connect I/O devices to this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

About This Hardware Installation Guide

Welcome to Hardware Installation Guide. This guide is designed to be used as step-by-step instructions for installation of your subsystem, and covers everything you need to know in learning how to operation, troubleshooting and future upgrades. For the detail about how to configure your subsystem, please refer to the Software Operation manual.

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.

Caution

This icons indicates that failure to follow directions could result in personal injury, damage to your equipment or loss of information.

Note

This icon presents commentary, sidelights, or interesting points of information. .

Important terms, commands and programs are put in **Boldface** font.

Screen text is given in **`screen`** font.

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Chapter 1. INTRODUCTION

This chapter introduces the features and capabilities of the Aberdeen XDAS Series RAID subsystem.

You will find:

- ⇨ **A full introduction to your XDAS RAID subsystem.**
- ⇨ **Details of key features and supplied accessories.**

Model Variations

There are six available models in XDAS RAID storage subsystem series, three of them utilize Ultra320 SCSI as Host interface, each with 8,12 or16 device bays. Another three models support 2Gb FC via SFP connector.

Model Name	*Host Interface*	*Device bays*
AL-6080S	2 x Ultra320 SCSI	8 bays
AL-6080F	2 x 2Gbps FC	8 bays
AL-6120S	2 x Ultra320 SCSI	12 bays
AL-6120F	2 x 2Gbps FC	12 bays
AL-6160S	2 x Ultra320 SCSI	16 ays
AL-6160F	2 x 2Gbps FC	16 bays

Features

The XDAS series is a high performance, external RAID subsystem using new generation of Serial ATA 1.0 channels for disk drives and either Ultra320 SCSI or 2Gbps Fibre channel I/O standard to connect services to Host computer. Target usage ranges are set from small business to departmental and corporate server needs. The XDAS RAID is designed for easy integration, smooth data expansion and server migration.

When properly configured, the XDAS RAID can provide non-stop service with a high degree of fault tolerance through the use of RAID technology and advanced array management features.

The XDAS series supports the following features:

- High performance super scalar Intel Xscale 80321 IO processor.
- Superior Array Management Firmware supports RAID levels 0, 1 (0+1), 3, 5, 6 and JBOD RAID configurations.
- Advanced 100MHz/64-bit PCI-X bus architecture
- Cache memory utilizes the Fastest 64-bit 200Mhz ECC DDR SDRAM and cache memory size up to 1 gigabytes.
- Dual Ultra-320 SCSI Host Interconnect supported → **AL-6xx0S**
- Dual Loop of 2Gb/sec Fibre Channel via SFP connector → **AL-6xx0F**
- New generation Serial ATA 1.0 Drive Interface supported,

  AL-6160 → Up to 16 SATA drives via two 8 channels SATA interface.

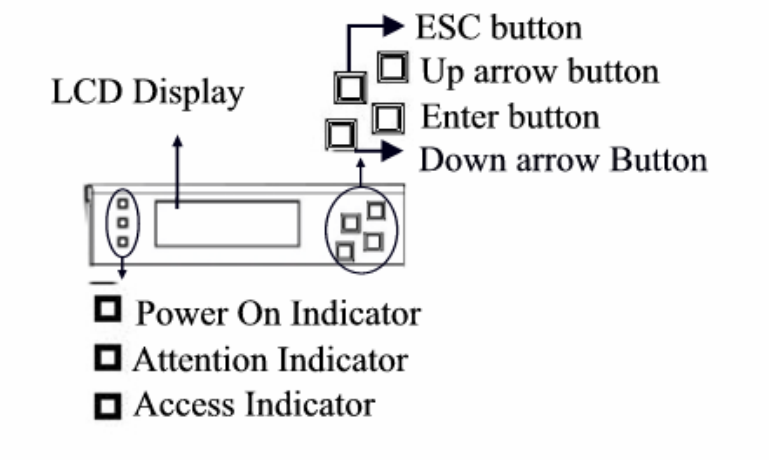
  AL-6120 → Up to 12 SATA drives via two 8 channels SATA interface.

  AL-6080 →Up to 8 SATA drives via single 8 channels SATA interface.
- Redundant and Hot Swappable Fan, Power and Drives.
- Hot Swap, Hot Spare and Automatic Drive Rebuild Supported.
- Configuration and environmental information is accessible either via the control panel or Serial Port or 10/100 Ethernet LAN port.
- E-mail event notification.
- Load sharing hot swappable redundant power system with PFC function.
- Host System independent.
- Operating System independent.

Understanding the XDAS RAID subsystem

Front Panel Overview

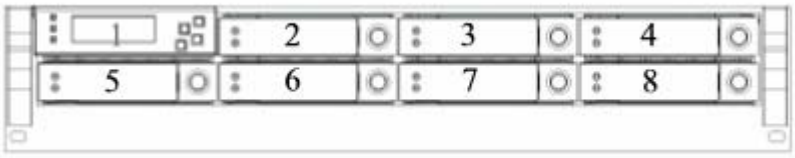
LCD Module



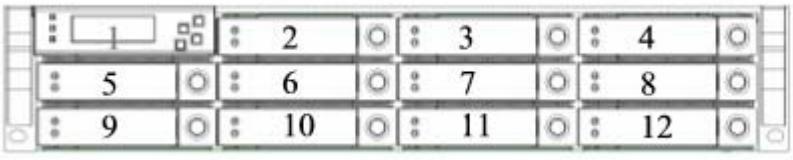
Driver Bay numbering convention

The enclosure bay numbering convention is shown in following figure. A bay is designed to house a single 1.0-inch high, 3,5-inch hard disk drive in his carrier module.

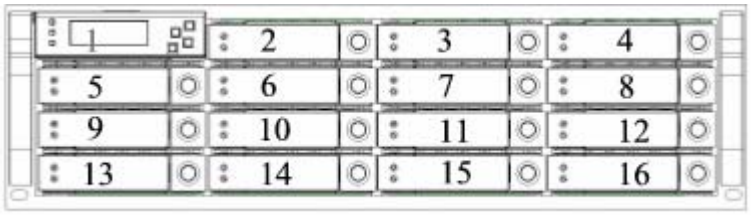
AL-6080



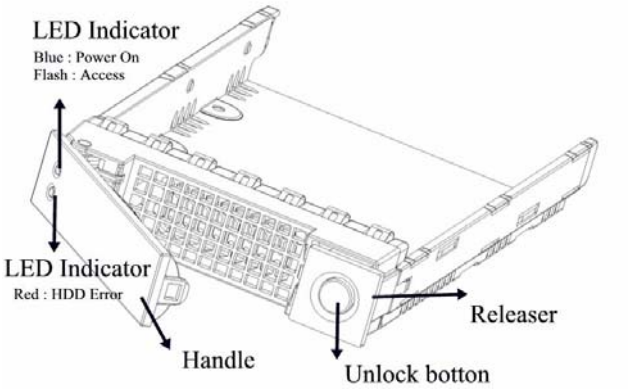
AL-6120



AL-6160

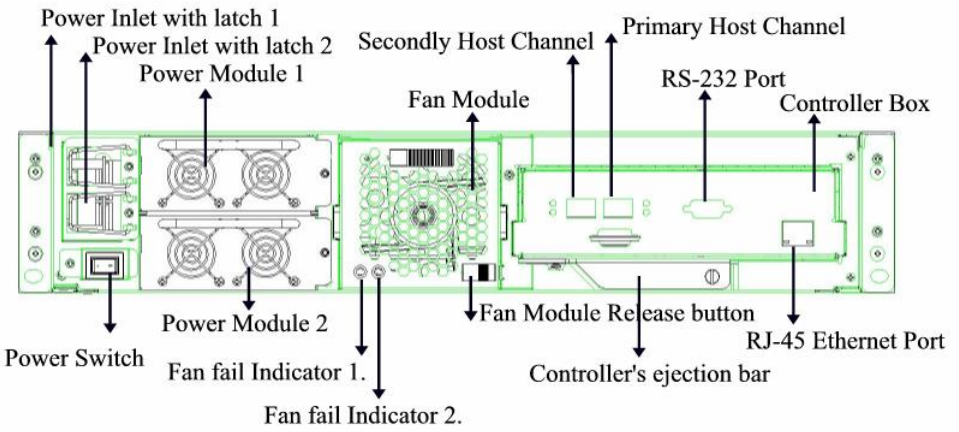


Drive Bay

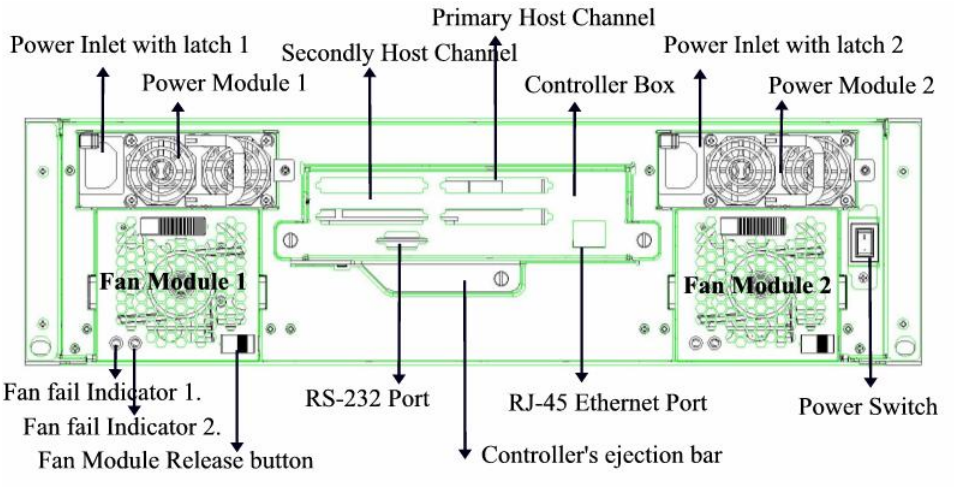


Rear Panel Overview

AL-6120 & AL-6080



AL-6160


Primary Host Channel
Power Inlet with latch 1
Secondly Host Channel
Power Inlet with latch 2
Power Module 1
Controller Box
Power Module 2
Fan Module 1
Fan Module 2
Fan fail Indicator 1.
Fan fail Indicator 2.
Fan Module Release button
RS-232 Port
RJ-45 Ethernet Port
Controller's ejection bar
Power Switch

Chapter 2. INSTALLATION

This chapter presents:

- ⇨ **Instructions on unpacking & checking the equipment**
- ⇨ **Instructions on how to install Hard disk drive**
- ⇨ **Instructions on how to install XDAS RAID in a Rack.**
- ⇨ **Instructions on how to connect XDAS RAID.**

Unpacking & checking the Equipment

Before unpacking the XDAS RAID subsystem, prepare a clean, stable surface to put on the contents of XDAS RAID shipping container. Altogether, you should find following items in the package :

XDAS SCSI to SATA Subsystem

- XDAS RAID subsystem x1
- CD-ROM x 1 (Includes Hardware Installation Guide, Software operation Manual & HTTP Proxy Server utility for Web browser-based Configuration).
- Ultra320 SCSI Cable x1
- Null cable x1
- Ultra320 SCSI Active Terminator x1
- Power Cord x 2
- Spare Fan x 1
- Spare Drive Bay x 1
- Rails for Rack
- Mounting screws (bag) ×1

XDAS Fibre to SATA Subsystem

- XDAS RAID subsystem x1
- CD-ROM x 1 (Includes Hardware Installation Guide, Software operation Manual & HTTP Proxy Server utility for Web browser-based

Configuration).

- Null cable x1
- Power Cord x 2
- Spare Fan x 1
- Spare Drive Bay x 1
- Rails for Rack
- Mounting screws (bag) ×1

Note

To avoid the unmatched connector type between the Fibre HBA in the Host computer and XDAS RAID, XDAS RAID doesn't include the Fibre cable with the standard shipping.

What else you need

- Hard disk drives (different RAID levels requires different numbers of HDDs. Refer to Software Operation manual for more detail information.
- Host computer with SCSI or Fibre interface.
- Dedicated terminal or PC with third party communication software that supports ANSI terminal emulation (required for viewing Monitor Utility)

ESD Precaution

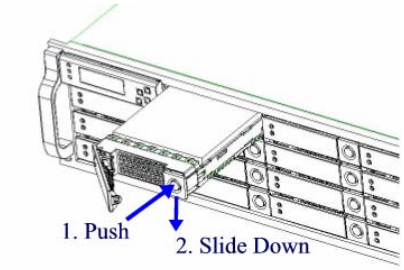
Use a suitable anti-static wrist or ankle strap and observe all conventional ESD precaution when handle XDAS RAID's modules and components. Avoid contact with backplane components and module connectors.

Installing hard disks

The XDAS RAID series includes 8/12/16 (depends on models) hot swappable drive bays. The following sections describe how to install disks into XDAS RAID subsystems.

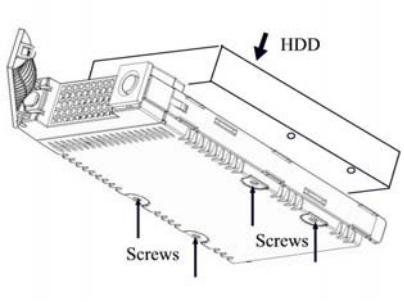
Remove the empty hot swappable driver bays

1. Push the unlock botton then slide down the Releaser on drive bays .
2. Left the handle to disengage the drive bay from the slot.



Loading Hard Disk to the drive bay.

1. Put HDD into the bay.
2. Fasten all 4 screws to mount HDD in the bay and make sure the HDD is properly tightened.



Place drive bays back into the system

1. Slide in drive bay, make sure the handle is open fully.
2. Close the handle to engage the drive bay into the slot.

Note

The hard drives in a RAID array should match in size and speed. All drives in any array should be identical models with the same firmware versions. RAID arrays can use any size drive, however the smallest drive will determine the size of the array.

Caution

Only use the screws offered with XDAS RAID subsystem. Longer screws might cause the drive damage.

Caution

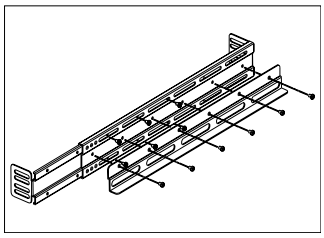
All the drive bays (with or without hard drive) must be placed in the XDAS subsystem. XDAS's cooling system is designed with full of drive bays. Missing drive bays might cause the subsystem damage.

Intsall the RAID XDAS subsystem in a Rack

You are shipped one rackmounting kit for each XDAS RAID subsystem that you intend to rackmount. XDAS RAID subsystem is designed for installation into a industry-standard 19-inch rackmount cabinet. Following the use of this section for installing the XDAS RAID subsystem into a Rack

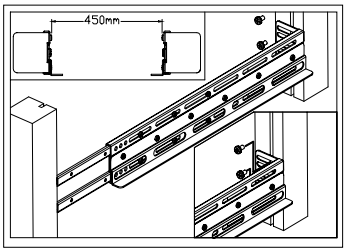
Assemble the Slide Rails

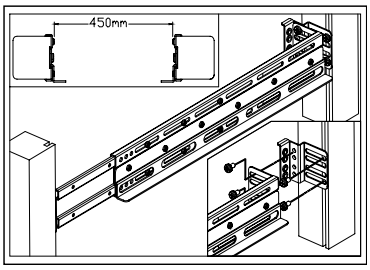
1. Measure the depth of the rack enclosure then see the detail drawings as bellow to assemble the Slide Rails.

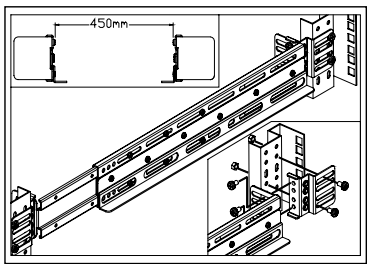


Mount the slide rails in the rack.

1. Install the slide rails from the lowest available position.
2. If necessary, use the mounting brackets to accommodate the different types of rack. See the detail drawing as bellow :







Install the XDAS RAID subsystem into the Rack Cabinet

1. Lift the XDAS RAID subsystem (one person on each side of the XDAS RAID) and approach the rack with the button-back of the XDAS RAID subsystem facing the end of Slide rails.
2. Slide the XDAS RAID subsystem evenly into the rack cabinet all the way.

3. Using the rackmount screws , secure the top and bottom of the XDAS RAID subsystem to the rack frame.

Caution

The XDAS RAID subsystem is heavy, two person are required to move the system in the procedure.

System Connection

Connect all cables and power cord as shown below :

Cable	XDAS RAID	Device	Purpose
Null Cable	RS-232 Port	ANSI Terminal or a PC with Terminal emulator.	Configuration Utility
SCSI cable / Fibre cable	Primary SCSI/ FC-AL Secondly SCSI/ FC-AL	HBA of Host computer	Host interface between RAID and Host computer
Power Cord	Power inlet	A/C power outlet	A/C power input
RJ 45 Cable	Ethernet Port	Switch or HUB	Connect to Internet .

Note

XDAS RAID subsystem do not require the installation of different drivers for use with different operating systems. XDAS RAID is independent and transparent to the host operating system.

Chapter 3. TROUBLE SHOOTING

This chapter contains trouble shooting procedures and suggestions to minimize their impact on the XDAS RAID operation :

⇨ **Instructions on how to replace the components of the XDAS RAID subsystem.**

If the fault LED on the front panel and LCD of XDAS RAID lights red and LCD displays a error message , or if XDAS RAID's Internet manager indicates a fault, determine the reason for this alert immediately. Examine the component LEDs to see if any indicates a fault, then replace it as soon as possible.

Replace the Controller

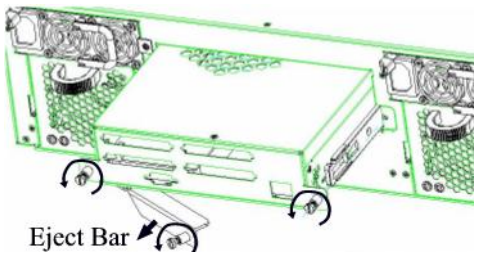
Caution

Read the replacing notices earlier in this chapter before proceeding with replacement.

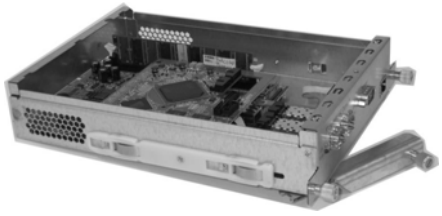
This section provides instructions for the removal and installation of the RAID controller components indicated in the figure below. This section is for the reference of engineers. End users should not need to replace or remove components.

Removing the controller from XDAS RAID :

In order to access controller box, turn anti-clock wise to release three thumb screws, then use the eject bar to remove controller box.



Disconnect all cables, then unscrew four fasteners on controller and upward to remove it.



Installing the controller into XDAS RAID:

Reverse the procedure of **"removing the controller"** to install the controller into XDAS RAID.

Then according to "Appendix C. Configuration table" on "Soft Operation Manual" to reconfigure your RAID

Replacing / Upgrading DIMM

XDAS RAID are normally supplied with 128MB cache memory installed.

Note

There's no set formula to determine how much cache memory to use, but as a general rule, a workstation, with mostly very large files, such as for audio or video editing and playback, graphics or CAD files, can benefit from a large cache. File servers, with multiple random access of varying file size, generally have little or no performance improvement with additional cache.

Specifications:

Type	◆ 184-pin DDR DIMM module (DDR-266) ◆ ECC, without Register and Unbuffered.
Parity (ECC)	◆ With parity for data security.
Size	◆ From 64MB, 128MB, 256MB, 512MB to 1GB

Architecture of supported DIMM:

Size	Architecture
64 MB	◆ 9 (8M bit x 8)
128 MB	◆ 9 (16M bit x8)
256 MB	◆ 9 (32M bit x 8)
512 MB	◆ 9 (64M bit x 8)
1 GB	◆ 9 (128M bit x 8)

Installing DIMM

To install a DIMM, ensure the system power is off and disconnected. Then:

1. Turn anti- lock wise to release three thumb screws, then use the eject bar to remove controller box.
2. Remove the daughter board.
3. Insert a memory card at a 45-degree angle into the memory card socket so that the gold teeth of the card are no longer visible.
4. Press the card down firmly until the latches lock it into place.

Caution

Before starting any kind of hardware installation, please ensure that all power switches have been turned off and all power cords disconnected to prevent personal injury and damage to the hardware

Caution

Use screws provided with XDAS system only. Longer or shorter screws may cause electric shorting or un-proper installed.

Caution

Static electricity can damage electronic components. To guard against such damage:

Work in a static-free environment

Wear a grounded anti-static wrist strap

Store uninstalled components in anti-static bags

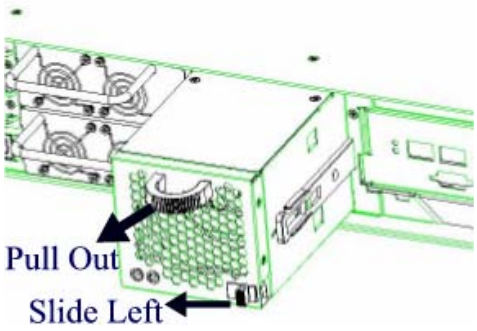
Handle PCBs by their edges and avoid touching chips and connectors.

Hot Swapping to replace the Fan Module

This section provides instructions for the removal and installation of the Fan Module indicated in the figure below.

Removing the Fan Module from XDAS :

Remove the Fan modules by slide the release button left and pull the module out of system.



Installing the Fan module into XDAS :

Insert a Fan module.

Replace the Fan in Fan module

1. There are two failure LEDs on the rear of Fan module. Check which LED lights to yellow.
2. Remove the Fan modules by anti-clock wise to release the thumb screw then slide it back and lifting off.

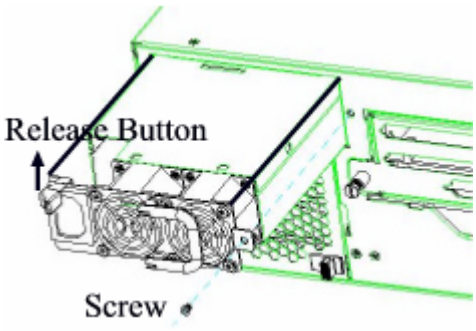
3. Release the screw to remove the defect fan.
4. Insert the spare Fan and fasten the screw.

Hot Swapping to replace the Power Module

This section provides instructions for the removal and installation of the Power Module indicated in the figure below.

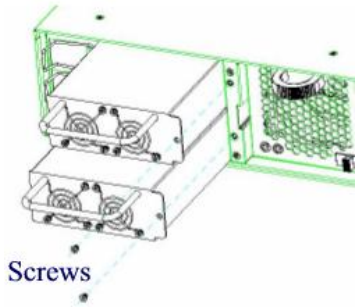
Removing the Power Module from XDAS AL-6160 :

Unscrew the fastener, then push right the release button, slide it back and lifting off.



Removing the Power Module from XDAS AI-6120 & AL-6080 :

Unscrew the fastener, then slide it back and lifting off.



Installing the Power module into XDAS :

Insert a Power module then fasten the screw.

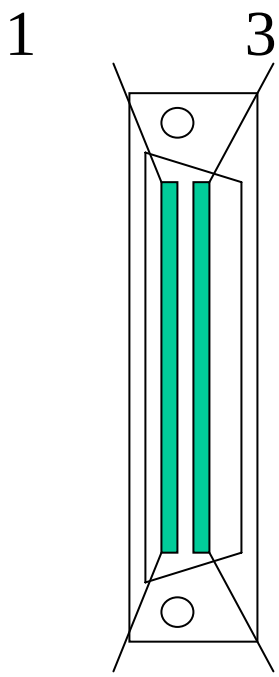
Note

The Power indicator will turn bright "Green" to indicate it has powered on

Appendix A

Connectors

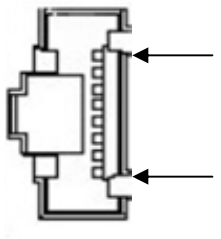
SCSI Connector



Pin#	Signal Name	Pin#	Signal Name
1	SCSI_AC_DAT<12>+	35	SCSI_AC_DAT<12>-
2	SCSI_AC_DAT<13>+	36	SCSI_AC_DAT<13>-
3	SCSI_AC_DAT<14>+	37	SCSI_AC_DAT<14>-
4	SCSI_AC_DAT<15>+	38	SCSI_AC_DAT<15>-
5	SCSI_AC_PAR<1>+	39	SCSI_AC_PAR<1>-
6	SCSI_AC_DAT<0>+	40	SCSI_AC_DAT<0>-
7	SCSI_AC_DAT<1>+	41	SCSI_AC_DAT<1>-
8	SCSI_AC_DAT<2>+	42	SCSI_AC_DAT<2>-
9	SCSI_AC_DAT<3>+	43	SCSI_AC_DAT<3>-
10	SCSI_AC_DAT<4>+	44	SCSI_AC_DAT<4>-
11	SCSI_AC_DAT<5>+	45	SCSI_AC_DAT<5>-
12	SCSI_AC_DAT<6>+	46	SCSI_AC_DAT<6>-
13	SCSI_AC_DAT<7>+	47	SCSI_AC_DAT<7>-
14	SCSI_AC_PAR<0>+	48	SCSI_AC_PAR<0>-
15	GND	49	GND
16	GND	50	GND
17	TERMPWRA	51	TERMPWRA
18	TERMPWRA	52	TERMPWRA
19	GND	53	GND
20	GND	54	GND
21	SCSI_AC_ATN_L+	55	SCSI_AC_ATN_L-
22	GND	56	GND
23	SCSI_AC_BSY_L+	57	SCSI_AC_BSY_L-
24	SCSI_AC_ACK_L+	58	SCSI_AC_ACK_L-
25	SCSI_AC_RST_L+	59	SCSI_AC_RST_L-
26	SCSI_AC_MSG_L+	60	SCSI_AC_MSG_L-
27	SCSI_AC_SEL_L+	61	SCSI_AC_SEL_L-
28	SCSI_AC_CD_L+	62	SCSI_AC_CD_L-
29	SCSI_AC_REQ_L+	63	SCSI_AC_REQ_L-
30	SCSI_AC_IO_L+	64	SCSI_AC_IO_L-
31	SCSI_AC_DAT<0>+	65	SCSI_AC_DAT<0>-
32	SCSI_AC_DAT<9>+	66	SCSI_AC_DAT<9>-

33	SCSI_AC_DAT<10>+	67	SCSI_AC_DAT<10>-
34	SCSI_AC_DAT<11>+	68	SCSI_AC_DAT<11>-

Ethernet RJ-45 Connector

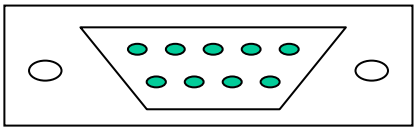


Pin#	Signal Name
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC

Fibre SFP

Pin#	Signal Name
1	VEFT
2	TFAULT
3	TDIS
4	MOD_DEF(2)
5	MOD_DEF(1)
6	MOD_DEF(0)
7	Rate Select
8	LOS
9	VEER
10	VEER
11	VEER
12	RD-
13	RD+
14	VEER
15	VCCR
16	VCCT
17	VEET
18	TD+
19	TD-
20	VEET

RS-232 & Modem Male Connector



Pin#	Signal	Pin#	Signal
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	TXC
5	GND		

Appendix B. Specifications

Specifications

RAID Architecture		
Intel Xscale 80321 I/O processor		
Proprietary ASIC to support extreme performance RAID 6 function.		
Up to 1GB 200MHz DDR SDRAM on one DIMM socket with ECC protection		
Marvell 8 channels SATA controller (88SX5080)		
RAID Features		
RAID Levels : 0, 1, 3, 5, 0+1, 6 & JBOD		
Multiple RAID selection		
Online RAID level/stripe size migration		
Online Array roaming		
Online capacity expansion and RAID level migration simultaneously		
Instant availability and background initialization		
Automatic drive insertion / removal detection and rebuilding		
Host Interface		
AL-XXXXS	AL-XXXXF	
Two Ultra320 SCSI Channels - 320MB/sec per channel	Two 2Gbps Fibre Channels – 200MB/sec per channel	
Drive Interface		
AL-6080	AL-6120	AL-6160
8 SATA 1.0 channel -1.5Gbps	12 SATA 1.0 channel -1.5Gbps	16 SATA 1.0 channel -1.5Gbps
Monitors/Indicators		
LCD Control Panel for setup, alarm mute and configuration		
System status indication through LCD, LED and alarm buzzer		
All system events can be sent to multiple user alerts to be via ‘ Plain English’ e-mails.		
RAID Management		

Field-upgradeable firmware in flash ROM.		
Firmware-embedded manager via RS-232 port.		
Firmware-embedded SMTP manager – Monitor all system events and user can select either single or multiple user alerts to be sent via ‘ Plain English’ e-mails.		
Firmware-embedded Web Browser-based RAID manager via 10/100 Ethernet port		
Operating System		
OS independent and transparent.		
Environmental /Physical		
Cooling System	Hot swappable and redundant Cooling Fan modules.	
Power System	AL6080 & AL 6120	AL-6160
	Redundant by Dual 350W Power modules with PFC feature, Load Sharing type and cableless design.	Redundant by Dual 460W Power modules with PFC feature, Load Sharing type and cableless design.
Electrical	AC Voltage 110-230 VAC Ac Frequency 50-60Hz	
Temperature	Operating Temperature : 10 to 35 degree C.	
Relative Humidity	20% to 80% non-condensing	
Dimensions	AL-6080 & 6120	446mm(W) x 480mm(D) x 88.8mm (H)
	AL-6160	446mm(W) x 470mm(D) x 133mm (H)
Weight	AL-6080	13.5Kg(W/O HDD)
	AL-6120	13Kg (W/O HDD)
	AL-6160	18Kg (W/O HDD)

Note

Specifications subject to change without notice.